Tandem MIG™ 800 Amp Welding Torch

The Lincoln Tandem MIG 800 Amp Welding Torch is designed for medium duty robotic and hard automation applications. The streamline configuration with extended gooseneck profile is ideal for robotic applications that require reaching welding joints with restricted access. The lightweight high strength machined aluminum torch construction provides precise wire placement that can be used on 5 kg load capacity and larger robot arms. The torch features a heavy-duty brass water-cooled gas nozzle, designed to minimize spatter build-up and provide extended contact tip life.

Processes

Tandem MIG **Dual Wire GMAW**

Advantage Lincoln

- 800 amp rating for mixed gases, 60% duty cycle designed to meet most light gauge steel applications.
- Wide range of useable wire diameters (.035-.062 inches) provides versatility to fill a variety of application requirements.
- Cool operation for extended component life. Water-cooled nozzle extracts heat from the contact tips.
- Lightweight construction allows use with most common robot arms.
- Extended length goosenecks provide access to tight weld joint locations.
- 22 degree goosenecks provide positive wire contact at the contact tip.
- Two process derived contact tip spacing and angularity options.
- Large contact tip to diffuser seating area for cooler contact tip operation.
- Separate routing of air blast hose provides a nozzle cleaning option without compromising shielding gas supply lines.

Recommended Expendable Parts

Wire liners, contact tips, diffusers, nozzles, nozzle retainers and nozzle retainer insulators

Recommended Wire Feeders

Power Feed 10 Robotic Wire Feeders K1780-1* or K1780-2*
**Requires use of K1500-1 gun connector*

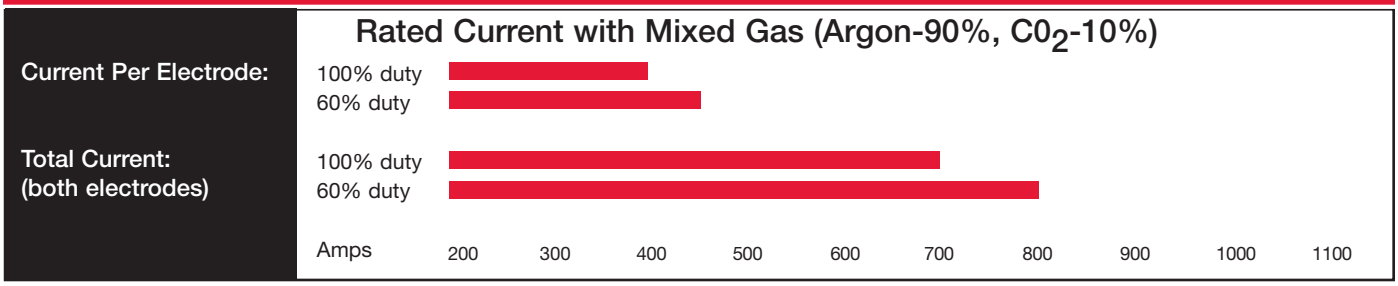
Recommended Power Sources

Tandem MIG power sources:

K2262-1-TM	Tandem MIG Power Wave 455M Robotic
K1519-1-TM	Tandem MIG Power Wave 655 Robotic

Order

S22693-XXX	Tandem MIG 800 Amp Welding Torch



For additional Tandem MIG information, request Tandem MIG Process document E10.60.

SYSTEM RECOMMENDATIONS

Welding Torch Protection:
When mounted on a Fanuc Robot, the S22693-172 Rigid Mounting Bracket is used along with Fanuc Collision Guard software. The rigid torch mounting and software combination assures repeatable torch placement and operator safety.

The M17809 Collision Sensor is recommended when using robotic arms that are not supported with collision sensing software and for fixed torch mounting associated with hard automation applications.

Recommended Wire Packaging:
The 22 degree bend in the gooseneck design provides positive wire delivery to the contact tip for good electrical transfer of welding current. Bulk wire packing in Accu-Trak™ drums, boxes or Speed-Feed reels is recommended. It is also recommended to install a K1733-1 wire straightener at the wire feeder. The addition of a wire straightener is to adjust for irregular conditioning of the wire during long conduit runs between bulk wire source and the wire feeder.

Automatic Torch Cleaning
Internal Air Blast: (robotic and fixed torch applications)
Each torch is supplied with an isolated gas hose and internal air routing for performing an optional air blast function. As standard, the torch is configured to receive a high pressure air purge that forces air between the two diffusers to remove spatter from the internal portion of the nozzle. Required equipment: high pressure air line capable of supplying dry air and solenoid.

Torch Reamer: (robotic application)
Increased production efficiency is established when using the M18426-1 Torch Reamer. The reamer is designed to remove unwanted spatter from the torch nozzle area, eliminating costly downtime associated with nozzle maintenance. The reamer is equipped with a single stroke reaming tool that cleans one side of the torch at a time. The torch is then indexed to ream the second side. Reamer comes complete with torch locating plate and anti-spatter misting station.

Water-cooling:
The torch is designed to operate with one water cooler. The cooler is used to supply cooling water to the torch's gas nozzle. Once cooling water is applied, the brass nozzle is designed to pull heat from the contact tips and provide a cool nozzle surface that will limit spatter build-up. Recommended AD1013-3 cooling system includes: Cool-Arc 40 water cooler, Magnum Flow Sensor and 25 ft each of water delivery and return hoses.

A CLOSER LOOK

Tandem MIG 800 Amp Welding Torch

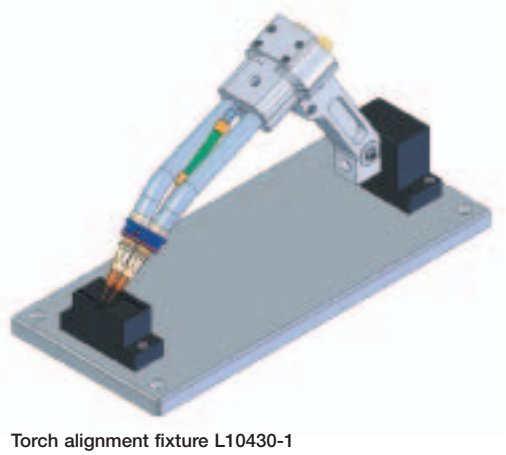
Torch Specifications :
Duty Cycle: 800 amps 60% duty, mixed gas
700 amps 100% duty, mixed gas
Max. current per electrode: 450 amps
Cooling requirements: one water circulating source providing a min. of .45 gpm, at 40 psi
Weight: 7.5 lbs. (with cables elevated 1 ft., 4 ft. from torch mounting bracket)
Available Lengths: 4 ft., 6 ft., 8 ft., 10 ft., 12 ft.
Compatible Torch Reamer with external sprayer: **M18426-1**

Torch mounting to Power Feed 10 Robotic wire feeders K1780-1 and K1780-2

The 800 amp Tandem MIG torch is supplied with Power Feed 10 Robotic Wire Feeder compatible cable ends. The cable assemblies plug directly into the feeder power block, (with K1506-1 gun connector installed.) Gas is delivered to each side of the torch through a short hose extending from associated wire feeder gas outlet fitting.

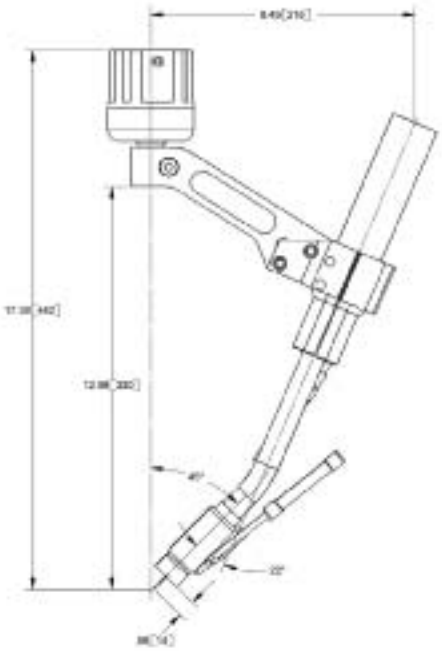
Torch alignment fixture L10430-1

Torch alignment should be performed after any severe torch collision or after any major torch disassembly. The L10430-1 torch alignment fixture is configured to set the alignment and spacing of the S22693-XXX torch contact tips. The bench fixture is engineered to accept both standard and wide spaced torch configurations.



Torch alignment fixture L10430-1

Torch Dimensions
Torch mounting bracket is included as part of the torch assembly (dimensions in inches [millimeters])



ORDERING INFORMATION:
Welding torch with torch mounting bracket and diffusers (less contact tips and liners)

Description	Part number	Shipping weight
Torch with 4 ft. cables	S22693-124	18.4 lbs.
Torch with 6 ft. cables	S22693-123	21.8 lbs.
Torch with 8 ft. cables	S22693-122	25.2 lbs.
Torch with 10 ft. cables	S22693-121	28.6 lbs.
Torch with 12 ft. cables	S22693-133	32.0 lbs.

EXPENDABLE REPLACEMENT PARTS

Water-Cooled Nozzle
Standard on all 800 amp torches.

The S22693-118 water-cooled nozzle assembly is designed to provide maximum gas coverage for both high speed and high deposit applications. Nozzle features brass construction for maximum rigidity and cooling.

Nozzle Retainers
Two different nozzle retainers are available for different electrode spacing.

Nozzle retainers are available with two different contact tip spacings — standard and wide. Each retainer provides the mounting surface for the gas nozzle and establishes contact tip spacing. An air blast hose is part of each assembly.
S22693-152 (Std.)
S22693-135 (Wide)

Nozzle Retainer Insulators
Two different Nozzle Retainer Insulators are available to accommodate different electrode spacing.

Torch Nozzle Retainer Insulator mounts between the torch retainer and gas diffusers, protecting the retainer and providing orifices for air blast cleaning. There are two different sized insulators to fit the two retainer sizes.
S22693-117 (Std.)
S22693-146 (Wide)

EXPENDABLE REPLACEMENT PARTS

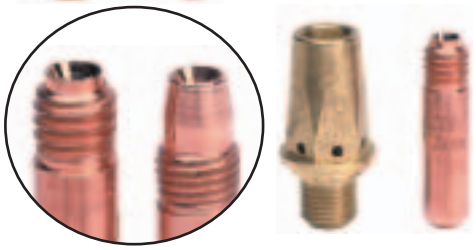
Diffuser and contact tips:

High current capacity taper lock contact tips and diffuser
As standard, the Tandem MIG 800 Amp Welding Torch is supplied with Taper Lock Diffusers (S22693-207) and Taper Lock Contact Tips. Diffusers are designed to provide a larger seating surface for the contact tips. The enlarged seating surface provides better current carrying capacity over conventional diffuser designs. Better current carrying capacity means less heating of the contact tips, longer tip wear and fewer tip changes. The diffuser design is complimented with a taper lock contact tip design providing a generous contact mating surface, fewer screw threads and dual thread starting points to speed tip replacement time.

Conventional heavy duty contact tips and diffuser
Industry standard contact tips and diffuser design are available for end users that have established a plant standard. The diffuser design is unique to the Tandem MIG torch, however the contact tip can be used on compatible semiautomatic welding torches.

Taper Lock Diffuser and Contact Tip

Conventional Diffuser and Contact Tip



EXPENDABLE REPLACEMENT PARTS FOR TANDEM MIG 800 AMP WELDING TORCH

Parts Description	Part Number	Quantity	Price
Nozzle Assembly	S22693-118		
Retainer (Standard spacing for .045 and .052 dia electrodes)	S22693-152		
Retainer (Wide spacing for special applications)	S22693-135		
Retainer “0” ring	S22693-136		
Nozzle Retainer Insulator (Standard spacing)	S22693-117		
Nozzle Retainer Insulator (Wide spacing)	S22693-146		
Wire liners:			
.035-.045 6 ft.	S22693-9		
.035-.045 15 ft.	S22693-158		
.052-.062 6 ft.	S22693-10		
.052-.062 15 ft.	S22693-159		
Diffuser (non-taper lock)	S22693-120		
Short diffuser (non-taper lock)	S22693-206		
Contact Tips:			
.030” dia. Heavy Duty	S22693-1		
.035” dia. Heavy Duty	S22693-2		
.045” dia. Heavy Duty	S22693-3		
.052” dia. Heavy Duty	S22693-4		
.062” dia. Heavy Duty	S22693-5		
Taper Lock Diffuser	S22693-207		
Taper Lock Contact Tips:			
.030” dia. Taper Lock	S22693-191		
.035” dia. Taper Lock	S22693-129		
.045” dia. Taper Lock	S22693-181		
.052” dia. Taper Lock	S22693-194		
.062” dia. Taper Lock	S22693-195		
		TOTAL:	

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